

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15 Abstract of the Disclosure

16 Optical to electrical and electrical to optical conversion assemblies provide precise
17 and stable alignment, low loss, unperturbed electrical transmission and high thermal
18 conductivity. Mechanically isolating the ceramic substrate of the conversion assembly relative
19 to the surrounding structures enables good long-term optical alignment. Electrical
20 transmission line connections to and from the optical conversion circuits on the ceramic

21 substrates are made via flexible circuit board designs. The alignment of the components on
22 the substrate relative to the plastic optics is thus preserved. The flexible circuit board includes
23 a cross hatched ground layer, which relieves portions of the metallization below the signal
24 layer and yet is able to maintain the desired transmission line properties. Electrical to optical
25 conversion circuits are provided where the transmission of the electrical signals to the
26 converter circuits is accomplished with minimal loss and with good signal integrity.